

Claims

- [c1] 1.A method of controlling printing quality in an inkjet printer having a printhead with a plurality of nozzles, the printhead mounted in a carriage, the method comprising:
- moving the carriage to repeatedly pass the printhead across a print medium in individual swaths;
 - firing individual nozzles repeatedly during each swath to apply an ink pattern to the print medium;
 - measuring the temperature of the printhead prior to each swath;
 - comparing the temperature of the printhead to at least one reference temperature; and
 - if the temperature of the printhead is greater than the reference temperature, raising the velocity of the carriage during the upcoming swath for ensuring that a distance ink is ejected from the printhead to the print medium is kept substantially constant during each swath.
- [c2] 2.The method of claim 1 wherein comparing the temperature of the printhead to at least one reference temperature comprises consulting a lookup table containing a

plurality of temperature ranges and corresponding carriage velocities, determining a current temperature range based on the measured temperature of the printhead, and adjusting the velocity of the carriage to be the carriage velocity corresponding to the current temperature range.

[c3] 3.The method of claim 2 wherein the higher the temperature range in the lookup table is, the higher the corresponding carriage velocity is.

[c4] 4.The method of claim 3 wherein as the temperature of the ink in the printhead increases, the velocity in which ink is ejected from the printhead increases, and raising the carriage velocity in response to higher temperatures of the printhead effectively ensures that an angle in which ink is ejected from the printhead to the print medium is kept substantially constant during each swath.

[c5] 5.The method of claim 2 further comprising increasing a rate at which ink is ejected from the printhead as the carriage velocity is increased.

[c6] 6.An inkjet printer that applies an ink pattern to a print medium, the printer comprising:
a printhead;

a carriage for mounting the printhead and for repeatedly passing the printhead across the print medium in individual swaths, the printhead having individual nozzles that are fired repeatedly during each swath to apply an ink pattern to the print medium;

a temperature sensor for measuring the temperature of the printhead prior to each swath; and

a control circuit for comparing the temperature of the printhead to at least one reference temperature and for raising the velocity of the carriage during the upcoming swath if the temperature of the printhead is greater than the reference temperature for ensuring that a distance ink is ejected from the printhead to the print medium is kept substantially constant during each swath.

[c7] 7.The inkjet printer of claim 6 further comprising a memory for storing a lookup table containing a plurality of temperature ranges and corresponding carriage velocities, wherein the control circuit consults the lookup table before each swath for determining a current temperature range based on the measured temperature of the printhead and for adjusting the velocity of the carriage to be the carriage velocity corresponding to the current temperature range.

[c8] 8.The inkjet printer of claim 7 wherein the higher the temperature range in the lookup table is, the higher the

corresponding carriage velocity is.

[c9] 9. The inkjet printer of claim 8 wherein as the temperature of the ink in the printhead increases, the velocity in which ink is ejected from the printhead increases, and raising the carriage velocity in response to higher temperatures of the printhead effectively ensures that an angle in which ink is ejected from the printhead to the print medium is kept substantially constant during each swath.

[c10] 10. A method of controlling a moving velocity of a printhead, the printhead mounted in a carriage and the carriage capable of moving the printhead back and forth, the printhead having a plurality of nozzles and the printhead capable of firing individual nozzles during each swath to apply an ink onto a print medium, the method comprising steps of:
measuring the temperature of the printhead prior to an upcoming swath;
comparing the temperature of the printhead to at least one reference temperature;
when the temperature of the printhead is greater than the reference temperature, moving the carriage at a first velocity during the upcoming swath; and
when the temperature of the printhead is lower than the reference temperature, moving the carriage at a second

velocity during the upcoming swath, the first velocity being higher than the second velocity.

[c11] 11.The method of claim 10 wherein comparing the temperature of the printhead to at least one reference temperature comprises consulting a lookup table containing a plurality of temperature ranges and corresponding carriage velocities, determining a current temperature range based on the measured temperature of the printhead, and adjusting the velocity of the carriage to be the carriage velocity corresponding to the current temperature range.

[c12] 12.The method of claim 11 wherein the higher the temperature range in the lookup table is, the higher the corresponding carriage velocity is.

[c13] 13.The method of claim 12 wherein as the temperature of the ink in the printhead increases, the velocity in which ink is ejected from the printhead increases, and raising the carriage velocity in response to higher temperatures of the printhead effectively ensures that an angle in which ink is ejected from the printhead to the print medium is kept substantially constant during each swath.

[c14] 14.The method of claim 11 further comprising increas-

ing a rate at which ink is ejected from the printhead as the carriage velocity is increased.